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154



Eye Surgery Light During eye surgery, the surgeon uses an illuminating instrument called an ophthalmoscope for close examination of the retina or the interior of the eye. Ordinarily, electric power for the head-mounted light is supplied through a cord from an overhead swivel arm or a floor pedestal. Within limits of cord length and swivel arm movement, the surgeon has considerable freedom of motion. But when more than one ophthalmoscope is involved, tangling and interference of the power cords becomes a problem.

St. Luke's Hospital, Cleveland, Ohio asked Lewis Research Center for assistance in finding a solution. Lewis responded with a battery-powered system that totally frees the surgeon of attached cords and swivels.

Borrowing from space technology, Lewis used small, lightweight nickel-cadmium batteries that can deliver high intensity light for an hour and can be recharged overnight. The Ophthalmoscope Powerpack consists of eight batteries in three containers affixed to a webbed belt, and a novel on-off switch equipped with a spring-loaded plexiglass "flapper." The belt pack is worn underneath the surgical gown and the flapper permits the doctor to activate the switch by elbow pressure (upper photo).

Lewis built five units and they have been in service at St. Luke's Hospital for a year. Used for routine examinations as well as for surgery, they have demonstrated excellent reliability.

155

#92